A Questionnaire for Surveying Personal and Communicative Style

Carol S. Swindell, Gail V. Pashek, Audrey L. Holland
University of Pittsburgh, Pittsburgh, Pennsylvania

Prognostication has been for a long time a challenge to the clinician working with the stroke patient. Horner and Rothi (in press) refer to this process as a type of problem solving, whereby the clinician's challenge is to be apprised of the many variables that may influence prognosis. Familiarity with the literature addressing these variables, however, seldom provides the complete equation to correctly solve the problem. We have all seen patients whom we expected to recover quite well, but did not. Conversely, we have also seen patients whose initial prognosis was poor, yet who recovered a substantial portion of their language function.

In an effort to contribute to the equation, we are investigating the prognostic value of two additional variables. These are premorbid personal style and communicative style. Although the relationship between these supplementary variables and recovery has not been investigated previously, their potential influence has not been overlooked. Wertz (1978) has discussed motivation and cooperation; Eisenson (1949) flexibility; while Holland (1982) has included adaptability to deficits and problem solving abilities as having the potential to influence prognosis. Our task was to develop an inventory of those characteristics which could be quantitatively correlated to communication recovery, and which would not rely upon the patient as informant. We developed a questionnaire for families.

This paper will present the development of the questionnaire, its reliability, and finally some thoughts about how it might be used in prognosis and in the treatment of stroke patients.

DEVELOPMENT

The questionnaire (Appendix A) consists of a cover page of background information and two measures. The first measure utilizes a modified semantic differential scale to evaluate what we have termed personal style. This 5-point scale is used to rate the patient in the areas of humor, flexibility, problem-solving, etc. We selected these areas and compiled a list of characteristics that we felt characterized patients with the greatest recovery potential. Thus, our ideal patient would receive ratings on the right side of the scale, obtaining the highest total score.

The second measure was used to determine what styles of communication characterized a patient. A series of behavioral statements was developed that described the patient as a writer, reader, speaker, listener, and nonverbal communicator. The informant responds with a plus if the statement describes the patient and a minus if it does not. The pluses are added to obtain a total score for each communicative style.

RELIABILITY

Following the development of the questionnaire, it was distributed among 50 nonaphasic couples. Each partner was requested to rate himself or herself and to rate each other.

The mean score, range, and reliability of the 50 couples on the personal style scale is presented in Table 1. Reliability was assessed by computing percentage agreement between self-ratings and partner-ratings for each item. Our original criteria called for absolute agreement between self- and partner-ratings. Due to the low reliability of the results, we modified the criteria to include a one-point rating difference in either direction. For example, a rating of 2 was considered in agreement with a rating of 2, 1, or 3. Percentage agreement between self- and partner-ratings of both sexes was 84.8% with a range of 76 to 100%.

Table 1. Mean and range of Personal Style scores for 50 nonaphasic couples (total possible: 15-75). Percent agreement between self- and partner-ratings.

Mean Score   56.84

Range   26 - 70

Reliability	Percent Agreement	Range
Total Group	84.80	76 - 100
Males	83.86	76 - 92
Females	86.53	82 - 100

The percentage of agreement for male and female raters was examined to determine if there was any difference in their reliability using the scale. Analysis using the Mann-Whitney U Test for large samples yielded a Z value of 1.12 (P > 1.0) indicating that the difference in reliability was non-significant.

Table 2 presents the mean score, range, and reliability of the couples for each area of communicative style. Percentage agreement between self- and partner ratings of both sexes was 74.4%, with a range of 62 to 84%. A breakdown of the percentage agreement for each communicative style area is also presented in Table 2.

Table 2. Mean and range of Communicative Style scores for 50 nonaphasic couples (total possible each scale: 0-7). Percent agreement between self- and partner-ratings.

Total Group Area	Mean Score	Range
Drawing/Gesture	4.27	0 - 7
Writing	4.58	0 - 7
Reading	4.91	1 - 7
Talking	3.60	0 - 7
Listening	5.40	1 - 7

Reliability			
Area	Total Group	Female Raters	Male Raters
Drawing/Gesture	71.14	65.86	76.43
Writing	77.00	73.43	80.57
Reading	76.43	73.14	79.71
Talking	72.14	69.57	74.71
Listening	75.21	74.43	76.00
Total	74.38	71.29	77.48

A Mann Whitney U Test was used to determine if there was any difference in the percentage agreement for male and female raters. The obtained Z value of 3.11 was significant at the .01 level of probability. Males were more reliable in rating their partners on the communicative style items than females were.

These reliability scores were partially the result of deletion of some items from our original questionnaire. We omitted items for which the agreement of both male and female raters was less than 70%. We also deleted items to which 90% or more of the subjects responded with a plus or a minus. For example, we originally included the item, "S/He keeps a daily journal or diary." More than 90% of the normal subjects responded "no" to this item. We felt that this item should be eliminated because it was a low information item that did not discriminate among individuals' communicative styles.

PROGNOSIS

Personal Style. We administered the questionnaire to the spouses of 12 stroke patients and examined the early recovery of those patients in relation to their personal and communicative style profiles. The patients are the initial subjects in a larger longitudinal study of recovery from stroke. To capture the earliest changes in communication during recovery, all patients were seen within 48 hours of onset. Observations of each patient were conducted during his or her hospital stay and formal testing was done at time of discharge using the Western Aphasia Battery (Kertesz, 1980). If a patient obtained a depressed Aphasia Quotient or Cortical Quotient at that time, subsequent testing was done at 1 and 2 months post-discharge. For each of the patients presented, recovery was defined as a ratio of actual change to total possible change between test scores at discharge and at 1 month post-discharge.

For the personal style scale, a total score was computed for each of the 12 patients. This total score was compared to changes in aphasia quotient and cortical quotient. Subjects were divided into two groups, depending upon whether their proportion improvement fell above or below the median of the group. Subjects were then classified according to their total personal style scores.

The Fisher Exact Probability Test was used to determine whether those patients with higher personal style scores showed more recovery in Aphasia or Cortical Quotient than patients with lower personal style scores. Table 3 presents the results. The observed difference for total score and Aphasia Quotient was significant at the .05 level. The observed difference for total score and Cortical Quotient exhibited a similar trend, but did not reach significance.

Table 3. Distribution of 12 stroke patients in relation to the median scores for Personal Style and for proportion increase in Aphasia Quotient (AQ) and Cortical Quotient (CQ) on the Western Aphasia Battery.

		Proportion AQ Change		Proportion CQ Change	
		$>.33$	$<.33$	$>.40$	$<.40$
Personal Style	$>.55$	5	1	4	2
Score	$<.55$	1	5	2	4

Caution is necessary in interpreting these results given the small size of our sample. We conclude that the personal style scale supports the rationale for its development. The trends noted also provide support for its continued use in the investigation of the relationship between personal style and recovery.

Communicative Style. Our initial interest was the difference in patterns of communicative style within and across the 12 subjects. Figure 1 shows the profiles of 6 randomly selected subjects. Patients with left hemisphere damage are represented on the left side of the table and patients with right hemisphere damage are on the right. The graphs present total scores for each communicative style area—Drawing/Gesturing, Writing, Reading, Talking, and Listening (from left to right).

A variety of patterns is evident within and across the subjects. The mean score and range for these patients was comparable to our normal sample, although normal subjects had slightly higher scores in the areas of Gesturing/Drawing, Writing, and Reading. Right hemisphere subjects tended to have higher overall scores in each area than left hemisphere subjects, which we interpret as an artifact of our small sample size.

We will now present the patient from the left hemisphere group who had the greatest proportion increase in aphasia quotient and the patient from the right hemisphere group who had the greatest increase in cortical quotient and discuss their recoveries with reference to their communicative styles.

The upper half of Figure 2 presents the communicative style profile of a 64-year-old man with a diagnosis of right hemisphere thromboembolic stroke. The lower half of Figure 2 shows a representation of this patient's proportion increase on the Western Aphasia Battery. Note the striking similarities between the profile of his communicative style and the pattern of his recovery in each area. This may suggest that there is a relationship between communicative style and recovery for this patient. However, it may be argued that we might predict this recovery pattern given the nature of the deficits typically associated with right hemisphere damage. In other words, we might expect this patient to demonstrate the least improvement in skills such as drawing/gesturing, writing, and reading. Nevertheless, this patient showed a pattern of improvement within those areas that mirrored his communicative style profile. This would be difficult to predict on the basis of his neurological damage alone. Furthermore, not all of the right hemisphere damaged patients demonstrated similar patterns of recovery within these areas. For example, one patient demonstrated the greatest improvement in reading and writing and the least improvement in talking.

In contrast to this profile/recovery pattern, Figure 3 presents the communicative style profile of a 40-year-old man with a diagnosis of left hemisphere thromboembolic stroke. Greatest improvement on the Western Aphasia Battery occurred for reading, which was a relatively low area in his communicative style profile. The least improvement was in drawing/gesturing, a relatively strong area on his profile.

The communicative style profile may be helpful in treatment planning. The upper half of Figure 4 is the profile of a patient with conduction aphasia. What information could be helpful to the clinician? In an attempt to compensate for his word-finding difficulties, this patient demonstrated a variety of strategies. These included requesting help from the listener,
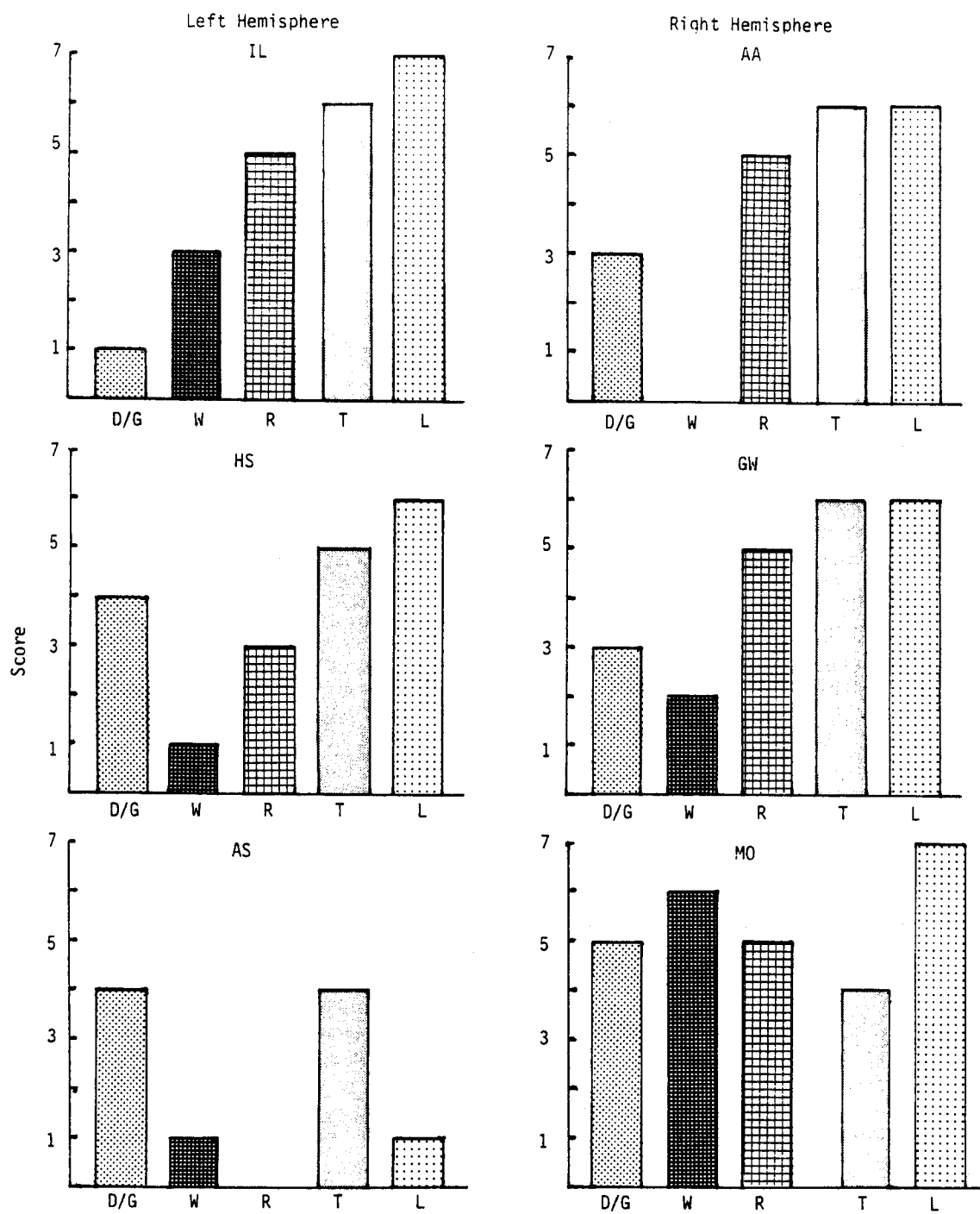
Figure 1. Communicative Style profiles of six stroke patients for the areas of Drawing and Gesture (D/G), Writing (W), Reading (R), Talking (T), and Listening (L).
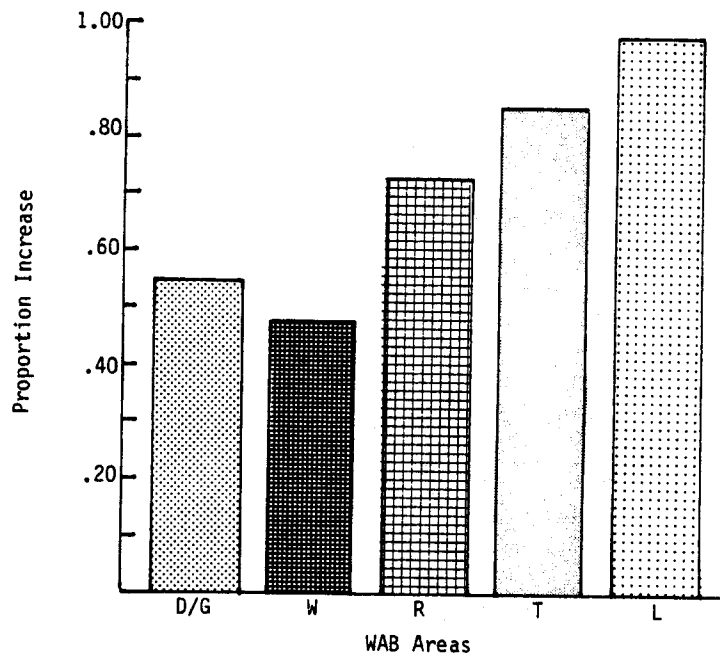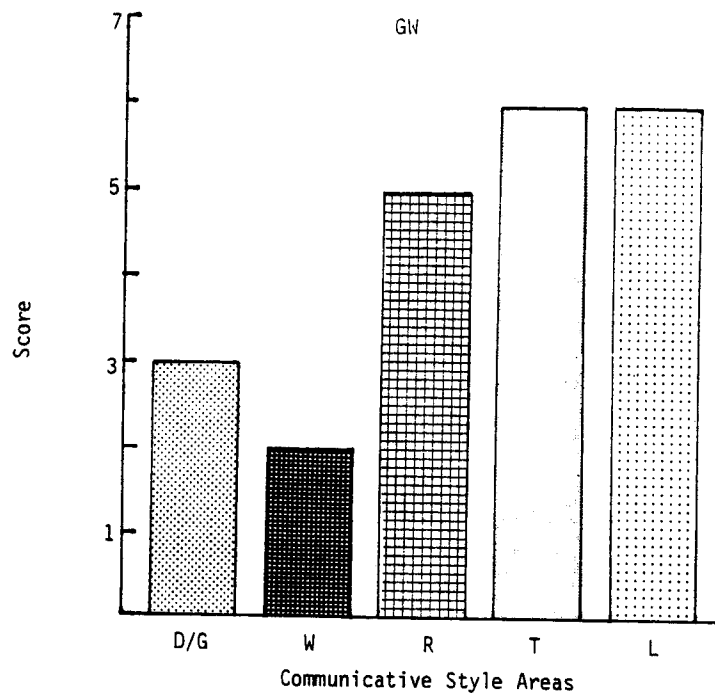
Figure 2. Communicative Style profile and profile of Western Aphasia
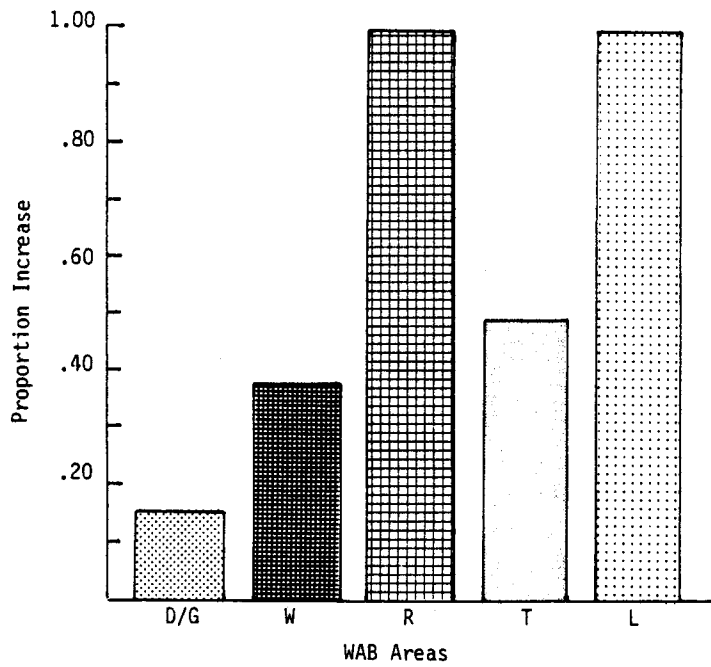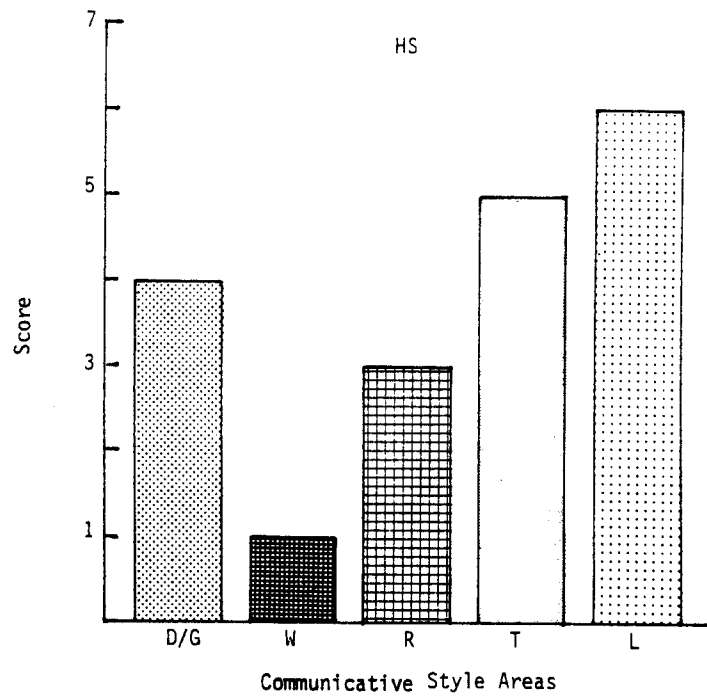Battery (WAB) score increases in comparable areas for Patient GW.

Figure 3. Communicative Style profile and profile of Western Aphasia Battery (WAB) score increases in comparable areas for Patient HS.
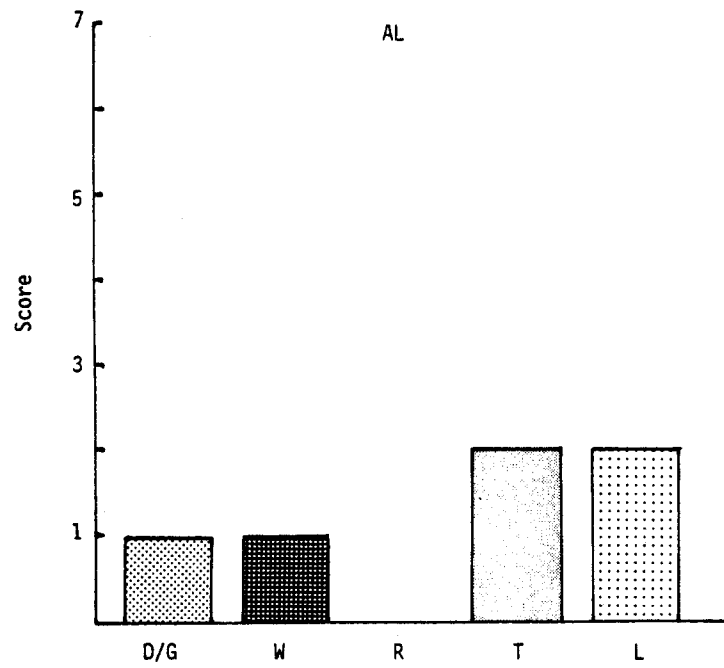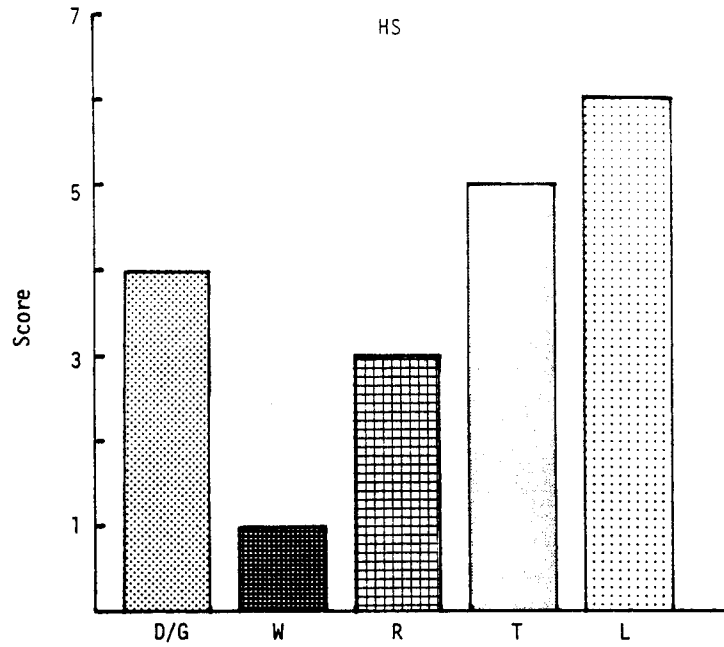
Figure 4. Communicative Style profiles of two patients with anomia.

writing, drawing, and gesturing. Observations during this patient's hospital stay indicated that the patient was more successful when he used gesture and requested help from the listener than when he was writing. Premorbidly, this patient appears to have been more of a talker and gesturer than a writer. Therefore, his communicative style profile may provide valuable information about a cueing hierarchy to assist him in compensating for his word-finding deficits.

The lower half of Figure 4 is the profile of an 80-year-old anomic patient. Her overall scores in all areas were low, with talking and listening stronger than other areas. Circumlocution and requests for help from the listener were the only strategies that this patient used during hospital observations. These attempts to compensate for her word-finding deficits were relatively few in comparison to patient HS. Given this woman' profile, one might question the usefulness of reading exercises or strategie as part of a therapy plan. She does not appear to have been much of a reade prior to her stroke. Rather, treatment might capitalize on her verbal strategies and focus on increasing the overall frequency with which she uses the strategies.

SUMMARY

In summary, we have discussed the development, reliability, and limited application of a tool to measure personal and communicative style. We have attempted to measure variables which are not easily quantified. Although communicative instances are elusive, our data suggest that distinctive communicative styles exist among speakers and that these styles can be estimated by others fairly reliably.

Our limited sample is the result of a happy fact; most of our patients demonstrated normal cognitive and language functions by the time of their discharge from the hospital. It is now our task to evaluate the prognostic value of these premorbid factors in those patients with residual deficits. We present the Communicative Style Questionnaire as a measure to personalize our treatment and increase our clinical effectiveness.

REFERENCES

Eisenson, J. Prognostic related to language rehabilitation in aphasic patients. Journal of Speech and Hearing Disorders, 14, 262-264, 1949.

Holland, A.L. Observing functional communication in aphasic adults. Journal of Speech and Hearing Disorders, 47, 50-56, 1982.

Horner, J. and Rothi, L.J. Prognosis for recovery from aphasia: Natural recovery and treatment potential (in press).

Kertesz, A. Western Aphasia Battery. London, Ontario: University of Western Ontario, 1980.

Siegel, S. Nonparametric Statistics. New York: McGraw-Hill Book Company, 1956.

Wertz, R.T. Neuropathologies of speech and language. An introduction to patient management. In Johns, D. (Ed.), Clinical Management of Neurogenic Communicative Disorders. Boston: Little, Brown and Company, 197

DISCUSSION

Q: Have you any thoughts about relating this questionnaire to the literature regarding hemispheric differences in cognitive style?

A: Yes. We included some items on the questionnaire that we felt addressed the issue of cognitive style. For example, on the personal style scale we included the item, "Can see only one solution to a problem." vs. "Sees many ways to solve a problem." This provided us with some ideas about a person's divergent thinking, along the lines of Chapey's work.

Q: Were you thinking of left hemisphere versus right hemisphere?

A: Yes, for several of the items on communicative style. Unfortunately, the reliability of these items was low. We attributed the low reliability to the fact that these concepts are not very observable. For example, we originally had the item, "S/He learns better by watching than by listening." Our data suggested that it is very difficult for spouses to observe this sort of learning.

Q: Because of spouses possible initial emotional reaction to trauma, the timing of the administration seems important. How do you handle this?

A: We administer the questionnaire at the close of the patient's hospital stay. We hope that, by this time, the spouse is starting to adapt. We do not have any real measure of this. It is an interesting point though, and I think it is something that we should take into consideration.

Q: Have you thought about the emotional biases in stroke that may influence the questionnaire's reliability and validity? I'm wondering about the applicability of your normal spouse reliability data to the spouses of these patients.

A: That's a good point. There is an interesting way in which we could deal with this. Since we have so many patients who recover, at some point we could go back and find out from them what their own personal and communicative style scores would be and to treat them as we have treated the normals.

Q: Your low agreement on self-ratings and ratings of other family members doesn't really surprise me. And I think that there is something to be learned from this. We are dependent on other peoples' ratings in so many of these cases. What you are pointing out is that that may not be the way the patient views himself or herself. In responding to the previous question about the recovery time for the spouse, we know that people recover from crisis at varying rates and our data, we think, are showing that it's a very different ballgame with a wife, say, after the husband has come home than it is while he's still in the hospital. You might want to think about that.

FAMILY QUESTIONNAIRE

Patient Name: _____   S#: _____

Informant Name: _____   Relationship: _____

Marital History: _____   Marital Status: _____

_____   Years Married: _____

Occupants of household; relationship: _____

_____

_____

Children: _____

_____

_____

Brothers/Sisters: _____

_____

_____

Occupation: _____   Status: Working: ___ Retired:

Education (years completed): _____

Educational/Vocational Training Beyond High School: _____

_____

_____

Is English the first language? _____   If not, what is? _____

Does the patient read and write English: _____

I. PERSONAL STYLE

For each of the following statements circle the number from 1 to 5 that best fits your family member. For example, the statement might read:

Homebody   1   2   3   4   5   Always on the go

If s/he is _definitely_ on the go all the time, circle the 5 or if _really_ a homebody, circle the 1. If you feel your family member is somewhere in between, circle the appropriate number in between (2, 3 or 4).

A.	Perfectionistic	1	2	3	4	5	Tolerant of imperfection
B.	Is easily influenced	1	2	3	4	5	Tend to take charge
C.	Can see only one solution to a problem.	1	2	3	4	5	Sees many ways to solve a problem.
D.	Dependent	1	2	3	4	5	Independent
E.	Keeps to him/her self	1	2	3	4	5	Outgoing
F.	Does not show much humor	1	2	3	4	5	Has good sense of humor
G.	Lacks confidence	1	2	3	4	5	Confident
H.	Too self-critical	1	2	3	4	5	Appropriately self-critical
I.	Expects the worst	1	2	3	4	5	Expects the best
J.	Overwhelmed by problems	1	2	3	4	5	Challenged and stimulated by problems
K.	Doesn't know him/her self well	1	2	3	4	5	Knows him/herself well
L.	Rigid	1	2	3	4	5	Flexible
M.	When things go wrong, stays down	1	2	3	4	5	When things go wrong, bounces back easily
N.	Easily thrown off balance	1	2	3	4	5	Takes things in stride
O.	Thinks things tend to work out badly	1	2	3	4	5	Thinks things will probably turn out OK

II. COMMUNICATIVE STYLE

Please read the statements below. After you have read each one, decide
if it describes your family member. If it does describe him/her, write
a plus (+) sign; if it does not, write a minus (-) sign in the space
beside the statement.

1. When giving directions s/he would be more likely to draw a
    map than to tell the directions.

2. When doodling, s/he tends to make figures (people, animals,
    objects) and geometric forms rather than words.

3. S/He paints and/or draws as part of work or hobby.

4. S/He can usually tell how others feel by their facial
    expressions.

5. S/He "talks with his/her hands."

6. S/He is an artistic or creative person.

7. S/He uses "demonstrating gestures" to help explain something.

8. S/He maintains a correspondence with at least one other person.

9. If s/he had a complaint s/he would be more likely to write
    a letter than to make a phone call.

10. S/He regularly makes lists (such as things to do).

11. S/He leaves notes for other people.

12. His/Her job involves a lot of paper work (If retired, refer
    to longest job held).

13. When sending out greeting cards s/he would tend to include
    some message beyond just a signature.

14. S/He keeps and uses an appointment book.

15. S/He depends on newspapers and magazines to keep up with
    current events.

16. S/He makes use of references such as dictionaries, and
    phone books.

17. S/He tends to read instructions for something first rather
    than "jumping in."

18.   S/He reads the equivalent of a book a month, or more.

19.   His/Her job involves a lot of reading (If retired, refer to longest held job).

20.   S/He subscribes to magazines or newspapers or book clubs.

21.   S/He takes what s/he reads very seriously.

22.   S/He really likes to talk.

23.   S/He tends to express anger in words rather than "walking out" or "clamming up."

24.   S/He is a good joke and storyteller.

25.   S/He has a way with words.

26.   S/He is good at imitating different accents.

27.   S/He is the "life of the party."

28.   His/her work involves a lot of speaking. (If retired, refer to longest held job.)

29.   S/He is a good listener.

30.   His/Her job requires a lot of listening to others.

31.   S/He rarely interrupts others when they are talking.

32.   S/He usually waits for an answer to a question s/he asks.

33.   S/He is usually interested in what other people have to say.

34.   S/He enjoys listening to lectures and sermons.

35.   S/He prefers to hear about others rather than talk about her/himself.